

Course Goal:

To provide the Police Radio Dispatcher with the information and training to properly assist in a Hazardous Materials Incident.

Objectives:

Upon completion of this overview program the Police Radio Dispatcher will be able to:

- A. Understand and use the definition of a Hazardous Material as given by the Department of Transportation (DOT)
- B. Identify the 5 levels of training as recognized by the State of New Mexico
- C. Understand the fundamental responsibilities of a law enforcement officer as a Hazardous Materials Emergency Responder trained to Level I: Awareness
- D. Identify the State Agency that has jurisdictional authority over Hazardous Materials Incidents in the State of New Mexico
- E. Identify Federal, State, County, and local agencies that may be involved in mitigation of a Hazardous Material Incident
- F. Understand and be able to obtain information required for initial dispatch to a Hazardous Materials Incident
- G. Understand and be able to use a North American Emergency Response Guidebook in referencing information regarding a Hazardous Materials Incident
- H. Understand the method of obtaining information on Hazardous Materials through the use of N.C.I.C.

DEFINITION OF A HAZARDOUS MATERIAL:

Any material that poses an unreasonable risk to the health and safety of operating or emergency personnel, the public, and/or the environment if it is not properly controlled during handling, storage, manufacture, processing, packaging, use, disposal, or transportation.

LEVELS OF TRAINING:

The State of New Mexico has several agencies, including the Department of Public Safety Training Center, the Emergency Medical Services Academy, and the State Fire Marshal's Office that has created training programs dealing with Hazardous Materials Emergency Response. All courses recognized by the State Safety Board have shown to meet or exceed minimum standards as set by O.S.H.A. and N.F.P.A.

First Responder Level 1: Awareness

Basic level of training in New Mexico. Courses are 8 hours long and include material on basic responsibilities of the Hazardous Materials First Responder. Lecture and practical scenarios instruct on the use of the North American Emergency Response Guidebook, identification of materials, notification procedures, and protective actions to be taken.

First Responder Level 2: Operations

Depending on the agency instructing, the Operations course may be either 24 or 32 hours in length. Courses taught in the field are normally 24 hours and courses taught at the State Fire Academy are 32 hours in length. Course includes more detailed methods of identification of hazardous materials using reference materials that can be obtained. Examples of different levels of protective clothing is discussed and methods of controlling some types of leaks are given. The students also learn about emergency decontamination.

Level 3: Hazardous Materials Technician

This is an 80 course presented only at the New Mexico Firefighters Training Academy. Subjects include use of different levels of protective clothing, decontamination, sealing containers, overpacking materials, etc.. Practical exercises are a heavy part of this course.

Level 4: Hazardous Materials Specialist

There is no specified course for a specialist in New Mexico. A “specialist” is recognized as someone having specialized training in one or more particular areas of Hazardous Materials Response. It could be a Chemical Engineer that works at a plant where an accident occurs, a Chemistry Professor at a University or High School, or an emergency responder that has specialized training in railroad tank cars. Each incident can have different “specialists” doing different things.

Level 4: Incident Commander

This will be the person in charge of the Hazardous Materials Incident. Firefighters or local law enforcement officers arriving on scene first will assume the responsibility of Incident Commander, but if the incident requires a State Police Emergency Response Officer to respond he/she will become the Incident Commander upon arrival. Further information on Emergency Response Officers will be given later in this course.

RESPONSIBILITIES OF AWARENESS TRAINED RESPONDER

Approximately 85% to 90% of the time a law enforcement officer will be the first to arrive on-scene of a Hazardous Materials Incident. Normally, in the State of New Mexico, law enforcement officers receive no higher than Awareness level training. With only this level of training the officer has basically only 4 responsibilities he/she must assume on scene.

1. Recognition – The officer must recognize the potential for a Hazardous Material to be involved in any incident he/she responds to
2. Identification – The officer must identify the material to the best of their ability using information given to them. Identifying the material to be a vapor, solid, or liquid is key to other responding emergency personnel as to how the incident may be approached
3. Notification – Proper notification must be given following local, State, and Federal policies and procedures
4. Isolation – The officer’s ability to isolate the scene and prevent further contamination to the public is instrumental in preventing injuries/deaths

RESPONSIBLE AGENCY

The State of New Mexico has jurisdictional authority over all Hazardous Materials Incidents and the New Mexico State Police have been given the task to act as the primary agency responsible. State Police is the representative for the State of New Mexico for all Hazardous Materials Incidents.

Some State Police officers have been given additional training in areas of Incident Command, Chemistry of Hazardous Materials, and other advanced training. These officers are designated as Emergency Response Officers and will assume the responsibility of Incident Commander when they arrive on scene of any Hazardous Materials Incident. These officers use the assistance of firefighters, Hazardous Materials response teams, and other law enforcement agencies to bring about a safe resolution to the incident. There are also "Headquarter E.R.O.s" who will be in contact with the field officer and lend assistance in obtaining needed resources and completing required paperwork.

OTHER AGENCIES

There are numerous agencies that may become involved in any Hazardous Materials incident. Local policies and procedures will dictate as to whom you, as an Emergency Dispatcher, will have to contact.

Some agencies that you may be required to contact on a National Level are:

Chemtrec: 1-800-424-9300

CHEMTREC (Chemical Transportation Emergency Center) is a public service of the Chemical Manufacturers Association. However, CHEMTREC, is not intended, nor equipped to function as a general information source.

**CHEMTREC DEALS ONLY WITH CHEMICAL TRANSPORTATION EMERGENCIES!
CHEMTREC OPERATES AROUND THE CLOCK - 24 HOURS A DAY, 7 DAYS A WEEK TO RECEIVE EMERGENCY CALLS.**

In the event of chemical transportation emergency, CHEMTREC provides immediate advice for those at the scene of emergencies, then promptly contacts the shipper of the chemicals for more detailed assistance and appropriate follow-up.

Chem-Tel, Inc.: 1-800-255-3924

CHEM-TEL, INC. is a 24-hour Emergency Response Phone Service providing MSDS database maintenance, MSDS internet services, MSDS writing, MSDS translations, MSDS upon Demand, customized disaster based coordination, and a variety of customized telephone/reporting based services.

CHEM-TEL, INC. was founded in 1988 to provide 24-HOUR EMERGENCY RESPONSE PHONE SERVICE and INCIDENT MITIGATION ASSISTANCE for the many industries manufacturing and shipping HAZMAT. In the years since Chem-Tel's inception they have responded to the needs of their clients by incorporating HEALTH and SAFETY RESPONSE SERVICES, MSDS AUTOMATION and DOCUMENT MANAGEMENT, REGULATORY ADVISORY GUIDANCE, DISASTER PREVENTION/ASSISTANCE and CUSTOM PROGRAMMING in the scope of the services provided.

National Response Center: 1-800-424-8802

The NRC is operated by the U.S. Coast Guard and receives reports required when dangerous goods and hazardous materials substances are spilled. Federal law requires that anyone who releases into the environment a reportable quantity of a hazardous substance (including oil when water is, or may be affected) or a material identified as a marine pollutant, must immediately notify the NRC. When in doubt as to whether the amount released equals the required reporting levels for these materials, the NRC should be notified.

NOTIFICATION REQUIREMENTS**Oil spill from a vessel or facility operating:**

- *In or along U.S. navigable waters*
- *On the Outer Continental Shelf*
- *In a deepwater port*
- *From a vessel transporting oil from the Outer Continental Shelf*

Chemical Releases:

Reportable quantities and reporting criteria are found in "Title 40 of the Code of Federal Regulations Part 302"

Transportation Accidents:

- *A person is killed*
- *A person receives injuries requiring hospitalization*
- *Property damage exceeds \$50,000*
- *Fire, breakage, or spillage of an etiologic agent occurs*

Liquid Pipeline Releases:

The responsible party must call when a pipeline system failure releases a hazardous liquid or carbon dioxide which causes any of the following:

- *An explosion or fire*
- *An escape to the atmosphere of more than five barrels a day of highly volatile liquid or carbon dioxide*
- *A death or injury*
- *Property damage exceeding \$50,000*
- *Pollution of any body of water*
- *An incident deemed significant by the operator*

Gas Pipeline Releases:

Releases of any toxic, corrosive or flammable gas, liquefied natural gas (LNG) or gas from an LNG facility must be reported when:

- *A death or injury involving patient hospitalization occurs*
- *More than \$50,000 damage occurs (including cost of lost gas)*
- *The release results in the emergency shutdown of an LNG facility*
- *An incident is deemed significant by the operator*

Calling the emergency response telephone number, Chemtrec, or Chem-Tel, Inc. does not constitute compliance with regulatory requirements to call the NRC.

Military Shipments: Department of Defense (DOD) Shipments:

Incidents involving explosives and ammunition – 703-697-0218 (Collect)

Incidents involving dangerous goods other than explosives and ammunition –

1-800-851-8061

Listed numbers are for EMERGENCY calls only

INITIAL DISPATCH FOR HAZARDOUS MATERIALS

As an Emergency Response Dispatcher you must realize that any call may involve hazardous materials in one way or another and make sure all available information is obtained.

EMS units that respond to a “person down” call may pull up on a victim laying in a pool of liquid or some type of dry chemical spill. Or, some type of vapor may have overcome the victim. You have to provide information to the responder to make sure they don’t pull blindly into a dangerous environment.

Motor vehicle accidents should always be considered to have the possibility of hazardous materials involved, until it can be proven otherwise. Even if the vehicle was not transporting hazardous materials, there is still the possibility of fuel (gas, diesel, propane, LNG, CNG), antifreeze, oil, battery acid, and hydraulic liquid spills.

Fires are a constant hazardous materials incident. All materials release some kind of toxic or poisonous vapors when they are burning. Firefighters should be aware of this, but if you can obtain information on what types of materials are burning you will greatly help their response strategies.

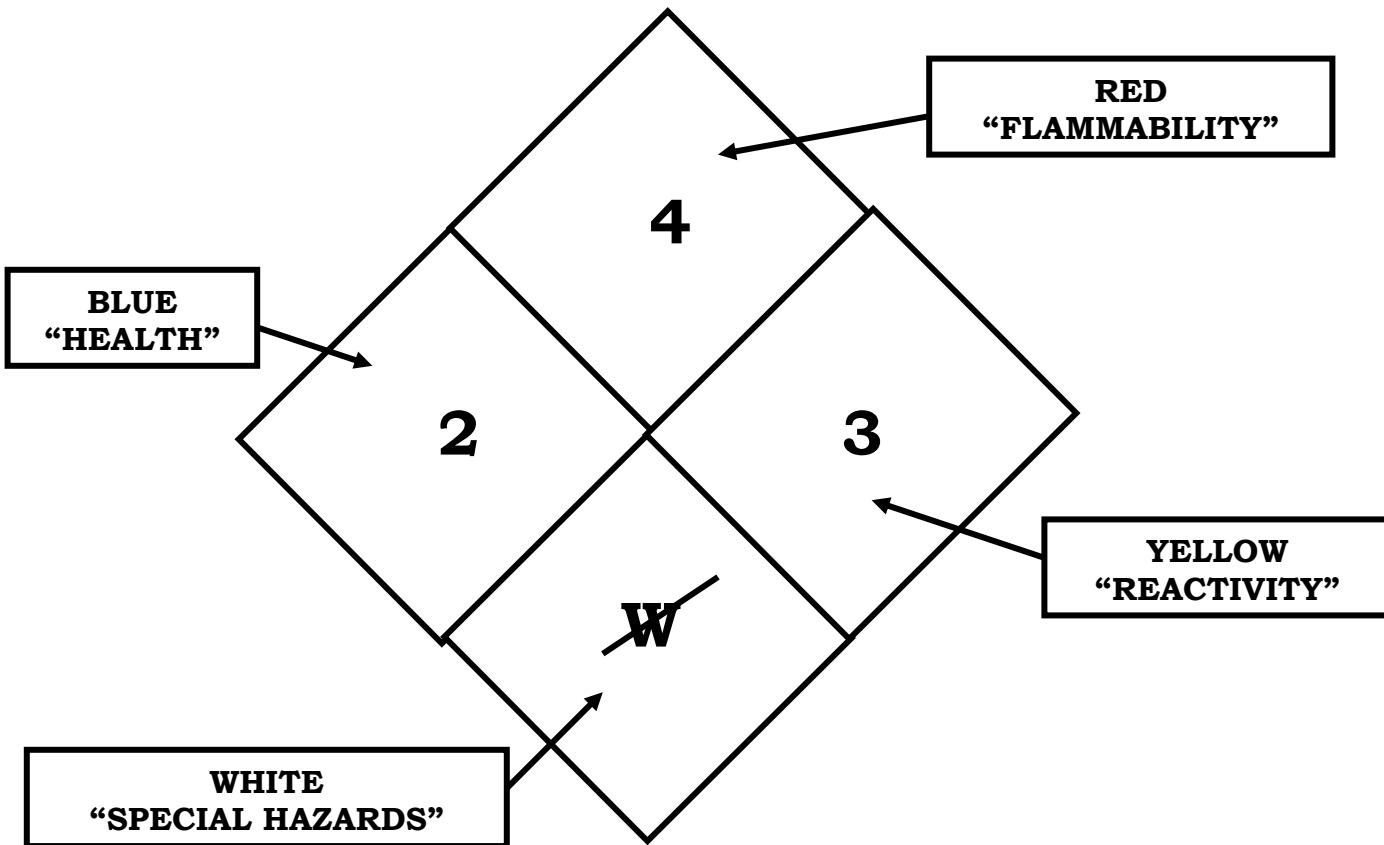
There are new “key” phrases in emergency response in this modern era. Today, “weapons of mass destruction” and “urban terrorism” are topics that are being talked about and new training programs are being developed/provided for. Heightened awareness of these problems has been brought forward due to recent bombings and shootings. The emergency responder will need to realize that this type of incident can happen anywhere at anytime.

What kind of information can you, as the Emergency Dispatcher, provide? The following is just recommendations on the type of information you need to try to obtain from the calling party, if at all possible.

1. **Exact** location of the incident – too many times emergency responders have been dispatched to one location only to pull into or through the hazardous material before they arrive at where they have been dispatched

2. Type of incident – Is it a :
 - a. transportation accident
 - b. industrial accident
 - c. manufacturing plant accident
 - d. criminal act
 - e. fire
 - f. etc.
3. Time incident occurred—Isolation and/or evacuation distances that are referenced in the North American Emergency Response Guidebook are established partially by how long ago did the incident occur. Emergency Medical Services will need to know how long victims have been exposed to the chemical(s).
4. Container type – The shape and type of container that the material is leaking from or has a potential to leak from provides a very good clue as to what type of material that the emergency responder will be faced with upon their arrival. If the emergency responder knows if the material is a solid, liquid, or gas it will greatly enhance his/her ability to approach the area safely. (see diagram #1)
5. Substance – if the reporting party knows the exact chemical name of the material being released, then you and the emergency responders can begin to use reference books to see what the dangers are. You have to be certain that the reporting party knows exactly what the material is. Providing false information to your responding units may endanger their safety. Again, if no more than “it’s a liquid, solid, or gas” can be obtained from the calling party, you have obtained important information for those units responding.
6. U.N. Identification Number:-- This is a 4-digit number that should be located on or near a placard on the vehicle, or listed on the shipping papers or MSDS sheets for the material. If this 4-digit number can be found it will greatly help in obtaining information on how to deal with the material. The number is used in several reference sources, including the North American Emergency Response Guidebook that the first responders should have in their units.

7. N.F.P.A. Placarding System – This is a placarding system that is used on “fixed facilities” and provides quick information to the emergency responder. It does not identify the material that is in the facility, but it will give degrees of hazard for quick reference. The placard is shown below, with information showing the types and level of hazards that can be displayed.



Numbers in Blue, Red, and Yellow blocks represent degree of that particular hazard, with “0” being minimum degree and “4” being highest degree. The box pictured above shows a medium “health” hazard, a dangerous “reactivity” hazard, and an extreme “flammability” hazard. Without even knowing what the material is, the emergency responder now knows that the greatest danger is from the material’s flammability.

The “Special Hazards” block normally will show either a ~~W~~ (as above) or an OX. The ~~W~~ shows that water is not to be applied and the OX would show that the material is an Oxidizer.

8. Amount of Material Spilled—This is extremely difficult for someone to determine, unless they know how much was in the container to begin with and how much is left in the container after the accident. If the reporting party can give a rough estimate of the amount of spillage or release, emergency responders may be able to determine the magnitude of the actual emergency, but it must be understood that a small leak of some materials is far worse than a large spill of others.
9. Current Condition of Material—This can be extremely important to the emergency responders. Knowing if the material is flowing (liquid), vapor cloud (gas or liquefied gas), puddles (liquid), or dust (solids) may determine the direction and method of approach to the scene. It is also important to know if the material or anything around the material is on fire.
10. Weather Conditions—Weather plays a fairly important role in the response to a hazardous materials incident. Wind direction is extremely important and should be obtained as close to the scene as possible. Just because the wind is blowing from the North at the airport doesn't mean that it will be blowing from the North at the scene, which is 10 miles away from the airport. Wind direction should always be stated as "blowing from" or "blowing to" whichever direction. A simple "Northerly wind" may mean one thing to one person and something entirely different to someone else.
11. Terrain—The topography of the area where a hazardous material incident has occurred is a large factor on how it will be dealt with. Is it in a valley, a stream bed, a lake, just a small depression, on asphalt or dirt? Knowing the topography will give a clue to the emergency responder on how to approach the incident and how the spill or leak may be controlled.
12. Environmental Concerns—It is important to know if the material is leaking into running water systems, or something like a sewer system. Certain agencies may have to be notified and the mitigation of the incident may be extremely difficult.
13. Number of People Affected—This is not only the people who may have already been involved in the incident and been contaminated, but also all of the possible victims that may need to be evacuated or sheltered-in-place during the incident.

ANY AND ALL INFORMATION YOU CAN OBTAIN WILL BENEFIT THE EMERGENCY RESPONDER.

HAZARD CLASSES

There are 9 "Hazard Classes" into which hazardous materials have been placed. These "Hazard Classes" will help in the identification of the material and how it may be dealt with.

- Class 1 : Explosives
- Class 2 : Gases (flammable, non-flammable, poison gas)
- Class 3 : Flammable / Combustible Liquids (Gasoline is flammable—Diesel is combustible)
- Class 4 : Flammable Solids (flammable, may react with water and/or hard to extinguish)
- Class 5 : Oxidizers (supplies oxygen which supports combustion)
- Class 6 : Poisons and Infectious Substances (toxic by inhalation, ingestion, absorption)
- Class 7 : Radioactive Substances (effects of radiation injury may not be immediately visible)
- Class 8 : Corrosives (includes Acids and Bases)
- Class 9 : Miscellaneous (presents a hazard during transport)

THE NORTH AMERICAN EMERGENCY RESPONSE GUIDEBOOK

The 1996 North American Emergency Response Guidebook (NAERG96) was developed jointly by the US Department of Transportation (DOT), Transport Canada (TC), and the Secretariat of Communications and Transportation of Mexico (SCT) for use by firefighters, police, and other emergency services personnel who may be the first to arrive at the scene of a transportation incident involving a hazardous material. It is primarily a guide to aid first responders in (1) quickly identifying the specific or generic classification of the material(s) involved in the incident, and (2) protecting themselves and the general public during this initial response phase of the incident. The NAERG96 is updated every three years to accommodate new products and technology.

1-Yellow section: Index list of dangerous goods in a numerical order of ID number. The purpose of this section is to quickly identify the Guide to be consulted from the ID# of the substance involved. This list displays the specific 4-digit ID number of the substance followed by its assigned emergency response Guide and the substance name. (Pages 17 to 92)

For example:

ID No.	Guide No.	Name of Material
1090	127	Acetone

2-Blue section: Index list of dangerous goods in an alphabetical order of substance name. The purpose of this section is to quickly identify the Guide to be consulted from the name of the substance involved. This list first displays the name of the substance followed by its assigned emergency response Guide and its assigned 4-digit ID number. (Pages 93 to 168)

For example:

Name of Material	Guide No.	ID No.
Sulfuric acid	137	1830

3-Orange section: This section is essentially the most important section of the Guidebook because this is where all safety recommendations are provided. It comprises a total of 62 individual Guides each providing safety recommendations and emergency response information to protect yourself and the public. Each Guide is designed to cover a group of substances which possess similar chemical and toxicological characteristics.

The title of the Guide identifies the type of substances and their general hazards. For example: Guide 124 - Gases-Toxic and/or Corrosive-Oxidizing.

Furthermore, each Guide contains general emergency response information which is displayed in a two-page format. The left-side page provides safety related information. It describes immediate hazards related to both fire/explosion or health effects of the substances.

Public Safety information follows and includes immediate isolation distances, protective clothing recommendations and suggested evacuation distances for large releases or fire situations (fragmentation hazard). The right-side page provides emergency response guidance and activities for fire situations, spill or leak incidents and first aid.

4-Green section: This section consists of a table which lists, by numerical ID number order, only those substances which are poisonous by inhalation (PIH/Poison Inhalation Hazard). This table provides two different types of recommended safe distances which are "Initial isolation distances" and "Protective action distances". These PIH substances are **clearly colour highlighted** for easy identification in both numeric (Yellow section) and alphabetic (Blue section) lists of the Guidebook. The table provides distances for both small (less than 208 liters/55 gals.) and large spills (more than 208 liters/55 gals.) for all highlighted substances. The list is further subdivided into daytime and nighttime situations, this is necessary due to varying atmospheric conditions which greatly affect the size of the hazardous area.

The "Initial Isolation Distance" is a distance within which all persons should be considered for evacuation in all directions from the actual spill/leak source. It is a distance (radius) which defines a circle (Initial Isolation Zone) within which persons may be exposed to dangerous concentrations **upwind** of the source and life threatening concentrations **downwind** of the source. For example, in the case of Compressed gas, flammable, toxic, n.o.s., Inhalation Hazard Zone A, the isolation distance for small spills is 215 meters (700 ft.) therefore representing an evacuation circle of 430 meters (1400 ft.) in diameter.

For the same substance, the "Protective Action Distance" is 1.9 kilometers (1.2 miles) for a daytime incident and 8.8 kilometers (5.5 miles) for a nighttime incident. These distances represent a downwind distance from the spill/leak source within which Protective Actions could be implemented. Protective Actions are those steps taken to preserve the health and safety of emergency responders and the public. People in this area could be evacuated and/or protected in-place inside buildings. For more information, consult pages 298 and 299 of the NAERG, "How to Use the Table of Initial Isolation and Protective Action Distances".

The green section also provides information on substances which produce toxic gases (Poison Inhalation Hazard gases) on contact with water. This list is to be used **only when** the substance has spilled in water. In all other situations, it is to be disregarded. This information is presented on the last two pages (338-339) of the table. For example, if zinc phosphide was involved (ID# 1714), the table indicates that PH₃ (phosphine) would be generated. In order to determine an appropriate Initial Isolation Distance and Protective Action Distance, you must refer to phosphine (ID# 2199).

ISOLATION AND EVACUATION DISTANCES

Isolation or evacuation distances are shown in the Guides (Orange section) and in the Table of Initial Isolation and Protective Action Distances (Green section). This can cause some confusion to the user if not thoroughly familiar with the NAERG96.

It is important to note that some of the Guides refer to non-PIH substances only (40 Guidepages) and some refer to PIH and non-PIH substances (22 Guides). A Guide refers to both PIH and non-PIH substances **only when** the following sentence appears under the title **EVACUATION - Spill**: "See the Table of Initial Isolation and Protective Action Distances for highlighted substances. For non-highlighted substances, increase, in the downwind direction, as necessary, the isolation distance shown under "PUBLIC SAFETY"." Remember, if this sentence does not appear in the Guide, then that Guide refers to non-PIH substances only.

If you are dealing with a **PIH substance** (colour highlighted entries in the Index lists: yellow or blue), the isolation and evacuation distances are found directly in the green section. The Guide (Orange section) also reminds the user to refer to the green section for evacuation specific information involving highlighted substances.

If you are dealing with a **non-PIH substance** but the Guide **refers to both PIH and non-PIH substances**, an immediate isolation distance is provided under the heading "**PUBLIC SAFETY**". It is applicable to the non-PIH substances **only**. In addition, for evacuation involving non-highlighted substances, the Guide informs the user (under the title **EVACUATION- Spill**) to increase, if necessary, in the downwind direction, the immediate isolation distance listed under the **Public Safety** title. For example, Guide 124 - Gases-Toxic and/or Corrosive-Oxidizing, instructs the user to: Isolate spill or leak area immediately for at least 100 to 200 meters (330 to 660 feet) in all directions. In case of a large spill, the isolation area could be expanded from 100 meters to a distance deemed as safe by the on-scene-commander and emergency responders.

If you are dealing with a **non-PIH substance** and the Guide refers to **non-PIH substances only**, the immediate isolation and evacuation distances are specified as actual distances within the Guide itself (Orange section) and are **not** referenced in the green section.